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ABSTRACT

The objectives of this study were identification and verification of key processes that could be used by higher education quality administrators to implement continuous improvement programs and benchmarking processes. East Tennessee State University's Continuous Improvement Key Process Relationship Matrix was used as the basis of a 44-item questionnaire sent to a sample of 49 higher education institutions; 26 replies (53 percent) were received. Responses were tabulated for 10 key processes and 34 associated performance measures. Key processes were: (1) teaching/learning; (2) enrollment management; (3) cultural environment; (4) strategic planning; (5) resource acquisition and development; (6) institutional management and governance; (7) research activity; (8) community outreach; (9) learning environment; and (10) communicating the institutional image. Of the key processes, the study found teaching/learning and enrollment management to have the highest agreement rate. Student retention data and exit examinations were identified as appropriate teaching and learning benchmarking measures; while retention data, student enrollment, and student satisfaction were cited as appropriate benchmarking measures for enrollment management. Twenty-one data tables summarize responses. The four appendixes include: the East Tennessee State University matrix; a copy of the letter of transmittal use; the questionnaire; and a directory of respondents. (Contains 40 references.) (CH)

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KEY PROCESS BENCHMARKING FOR CONTINUOUS IMPROVEMENT IN HIGHER EDUCATION

A Thesis

Presented to

the Faculty of the Department of Technology

East Tennessee State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Engineering Technology

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by

Robert Grisham Stewart

August 1996

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APPROVAL

This is to certify that the Graduate Committee of

ROBERT GRISHAM STEWART

met on the

8th day of July, 19 96.

The committee read and examined his thesis, supervised his defense of it in an oral examination, and decided to recommend that his study be submitted to the Graduate Council, in partial fulfillment of the requirements for the degree of Master of Science in Engineering Technology.

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Chair, Graduate Committee

Carroll R. Hayden

Signed on behalf of
the Graduate Council

Interim Dean, School of Graduate Studies

ABSTRACT

KEY PROCESS BENCHMARKING

FOR CONTINUOUS IMPROVEMENT IN HIGHER EDUCATION

by

Robert Grisham Stewart

The purpose of this study was to identify and verify the key processes and measures that can help higher education quality administrators implement a continuous improvement program and subsequent benchmarking process for their respective institutions. The benefits associated with benchmarking for continuous improvement are increased goal establishment and achievement and integration of proven practices.

To identify these key processes the literature was reviewed to establish the elements of both benchmarking and continuous improvement. East Tennessee State University's Continuous Improvement Key Process Relationship Matrix was used as the basis for this research.

To verify the ETSU Ten Key Processes and Measures survey research was conducted. A sample of forty-nine higher education institutions (unit of analysis) was drawn using a judgement (purposive) sampling technique. Each institution was represented by its resident quality administrator (unit of observation) who served as an informant for survey research. A forty-four item questionnaire was composed of ETSU'S Ten Key Processes and Thirty-Four Measures as extracted from the Matrix. A 53% total response (26 of 49) was obtained from administration of the questionnaire.

Eight of the ten key processes and 16 of the 34 measures obtained an 80% or greater agreement response. The study findings indicate that these processes and measures can be used as a framework for implementing benchmarking for continuous improvement in higher education.

DEDICATION

This thesis is dedicated to my parents, Fred and Birdie Stewart. Thanks for all of your support.

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I would like to thank Laura Norman for her help in editing the thesis manuscript. Additionally, I would also like to thank the graduate committee for their professional administration of this study.

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CHAPTER 1

INTRODUCTION

The Concept

Higher Education

Within the context of western society, higher education (higher learning) is defined as:

> instruction offered to persons of considerable intellectual maturity, usually requiring previous preparation through the secondary school; in terms of the institution common to the United States, higher education includes all education above the level of the secondary school given in colleges, universities, graduate schools, professional schools, technical institutes, teachers colleges, and normal schools. (Good, 1973, p. 282)

One of the oldest continuously operating universities, Cairo's University of Al-Azhar, was founded in 970 (Millet, 1969). Although the Arabs have been credited as the first to establish institutions of higher education, historians believe the western forerunners of modern universities were the University of Paris and the University of Bologna which were established in Europe during the 1100's (Millett, 1969). Harvard University, the first and oldest operating institution of higher education in the United States, was originally chartered by the state of Massachusetts as

Newtowne College in 1636 (Millett, 1969). Over the last 360 years the number of higher education institutions in the United States has grown to approximately 3665 schools (Rodenhouse, 1995).

According to Bemowski (1991), the two main functions of higher education institutions are "to educate and to generate knowledge" (p. 37). However, many of those associated with higher education acknowledge that these functions are not being adequately accomplished and advocate that higher education must improve if it is to remain viable (Kaufman & Zahn, 1993; Lewis & Smith, 1994; Seymour, 1992). In effectively summarizing the need for improvement in higher education, Lewis and Smith (1994) state:

> the environment of higher education is changing and competition for both students and funds will continue to increase, at a time when we are going to have to accomplish more with less. The result is that colleges and universities in the coming century will not be the same as they are today. Thus, the question that must be addressed is how we as members of the academy will respond to these (and related) trends. Will we respond in a proactive manner and initiate positive, quality-focused, learner-centered programs, or will we respond in a defensive manner, attempting to preserve the past at the expense of the future? (p. x)

Continuous Improvement

Continuous improvement (CI) may serve as one possible answer to the question posed by Lewis and Smith. According to Leibfried and McNair (1992), the philosophy of continuous improvement is a "never-ending-quest to be just a little bit better, every day, in every activity" (p. 97). The following names have been used to label this philosophy: total quality management (TQM), continuous quality improvement (CQI), quality improvement process (QIP), quality management (QM), and *Kaizen*. Quality is the only term explicitly expressed in all of these, except CI and *Kaizen*, where its meaning is implied.

Within the context of higher education, Hittman (1993) operationally defines quality as "a continuous effort by all members of an organization to meet students' and other interested parties' needs and expectations" (p. 78). However, as Bradley (1993) concludes, "What was quality in the past is not quality today, and what is quality today will not suffice as quality in the future" (p. 3). Its only constant is the meeting of needs and expectations.

The idea of controlling quality began with the first artisan who was responsible for performing all tasks relative to a product (Bradley, 1993). With the emergence of the Industrial Revolution, quality control tasks became the responsibility of full time inspectors and supervisors (Bradley, 1993). Frederick W. Taylor (1856-1915), Henry L.

Gantt (1861-1919), Frank B. Gilbreath (1886-1924), Lillian M. Gilbreath (1878-1972) and Harrington E. Emerson (1853-1931) developed a system for increasing productivity called scientific management, or Taylorism. Scientific management principles greatly emphasized production at the expense of quality, which gave American industries the ability to produce large quantities of materials. However, by 1915 the popularity of the scientific management movement began to decline because of its deemphasis of quality and its disregard for the well being of laborers (Bradley, 1993).

Walter Shewhart, W. Edwards Deming, Armaund Fiegenbaum, Joseph Juran, and Philip Crosby transformed the principles of scientific management into the philosophy of quality management. In 1924, Shewhart introduced a charting system which utilized control limits combined with statistical probability to predict the production of inferior products. In the 1930's, Shewhart collaborated with Deming to design a quality management system which views the production process holistically. At the heart of this management system lies Deming's fourteen points, the first of which is to create a constancy of purpose or according to Lewis and Smith (1994), continuous improvement.

Just as education adopted the principles of scientific management from industry in the 20th century (Hittman, 1993), many have advocated that higher education must adopt the principles of quality management (Bradley, 1993; Kaufman

& Zahn, 1993; Lewis & Smith, 1994; and Seymour, 1992). The adaptation of these principles from the private sector has already begun. Although Deming's fourteen points were originally written for business, they have been translated for education by Bradley (1993), Kaufman and Zahn (1993), and Wilcox (1992). Hull (1991) effectively summarizes the need for adopting the philosophy of continuous improvement for higher education:

> Academic life in America today exists in a world with too many schools and too few students, too many fixed costs and too few discretionary dollars, too many competitors and too few supporters. In such a world, survival *does* belong to the fittest, which will be those institutions imbued with a passion for quality that extends to every member of the community, faculty included. (p. 227)

Benchmarking

According to Leibfried and McNair (1992), "Benchmarking is based in the philosophy of continuous improvement" (p. 18). Therefore, it can serve as a catalyst for organizational acceptance of a continuous improvement program because it evaluates existing performance, establishes future goals, and targets improvements. (Leibfried & McNair, 1992). Within the context of higher education, Dabney, Lassila, and Collins (1995) offer the following constitutive definition of benchmarking:

> (1) a quantitative process for measuring, comparing and, assessing productivity, performance, and goals relative to other institutions; (2) a qualitative process for identifying best practices to improve one's own practices; (3) a method for opening communication with other universities and sharing information. (p. 2)

Benchmarking first occurred during the scientific management movement of the 1800's when Frederick Taylor advocated using a series of checks to compare performance (Watson, 1993). Since that time, benchmarking's complexity and applications have increased. In the early 1980's benchmarking, then known as reverse engineering, evolved into competitive benchmarking. In early 1989, process benchmarking became popular and served as the basis for strategic benchmarking. The next step in the evolutionary process of benchmarking will be its implementation on a global scale (Watson, 1993). Clark (1993) effectively summarizes the need for benchmarking in higher education:

> Universities can no longer experience the luxury of claiming their ranks contingent upon historical contributions. Institutions of higher education must indulge in strategies such as benchmarking in order to further develop instructional paradigms that serve to enrich their contribution. (p. 9)

The Problem

Statement

Within the concept of benchmarking for continuous improvement in higher education the author identified the following problem:

Higher education quality administrators are uncertain what key processes and associated measures are suitable for implementing a continuous improvement program and subsequent benchmarking process within their respective institutions.

Definition

Within the context of the problem the following units and variables were operationally defined:

Unit of analysis. Institutions of higher education were the units of analysis of the study. An institution of higher education is any public or private university or college that conducts purposeful teaching and learning utilizing an organized curriculum of instruction beyond the level of the secondary school (Butts, 1969).

Unit of observation. Higher education quality administrators were the units of observation of the study. A higher education quality administrator is any person charged with improving a process or service of his or her respective institution (Hales, 1996).

Variable of uncertainty. The quality or state of not being clearly identified or defined is the operational definition of uncertainty (McKechnie, 1983).

Variable of suitability. The quality or state of being appropriate, proper, or fitting is the operational definition of suitability (McKechnie, 1983).

Significance

The benefits resulting from benchmarking for continuous improvement in higher education are increased goal establishment and achievement and an increased competitiveness through the integration of proven practices (Camp, 1992). However, the uncertainty regarding the selection of key processes restricts attainment of these benefits. If key processes were identified, then the ability of quality administrators to make these benefits a reality for their respective institutions would be enhanced.

The Study

Purpose

The objectives of the study were to (1) identify; and (2) verify the key processes and associated measures that can help higher education quality administrators implement a continuous improvement program and subsequent benchmarking process for their respective institutions.

Questions

To accomplish the objective of identifying these key processes and associated measures, the following questions were defined:

1. What are the elements of continuous improvement as stipulated by the literature?
2. What are the elements of benchmarking as stipulated by the literature?

The following information was obtained from investigating the preceding questions:

1. The elements of continuous improvement are a leadership council, a mission statement, a vision statement, a values statement, and a goals statement.
2. The elements of benchmarking are a process-based management approach, key business processes, key process measures, a benchmarking team, process owners, a list of benchmarking partners or information sources, the documentation of internal products and processes, and an action plan.

The objective of this research was to verify East Tennessee State University's Continuous Improvement Key Process Relationship Matrix as a means for initiating continuous improvement and benchmarking in higher education.

1. How do higher education quality administrators feel about the suitability of East Tennessee State University's Ten Key Processes and Thirty-Four Measures

as obtained from the Continuous Improvement Key Process Relationship Matrix?

a. Which key processes and measures do quality administrators agree are suitable?

b. Which key processes and measures do quality administrators agree are unsuitable?

2. What "other" key processes and measures do quality administrators propose for inclusion?

These questions were investigated using a survey research method outlined in Chapter 3 of the study. The information resulting from this investigation is discussed in Chapter 4 of the study.

Vocabulary

The following terms have been defined according to their usage within the context of this study:

Higher education benchmarking. According to Dabney, Lassila, and Collins (1995), it is "(1) A quantitative process for measuring, comparing, and assessing productivity, performance, and goals relative to other institutions; (2) a qualitative process for identifying best practices to improve one's own practices; (3) a method for opening communication with other universities and sharing information" (p. 2).

Higher education institution (unit of analysis). Any public or private university or college that conducts purposeful teaching and learning utilizing an organized curriculum of instruction beyond the level of secondary school (Butts, 1969).

Higher education quality administrator (unit of observation). Any person charged with improving a process or service of his or her respective institution (Hales, 1996).

Key measures. The essential measurements for assessing the performance of a process which may include in-process and post-process measurements (Camp, 1995) and include both indicators of performance and progress. According to Fischer (1994), a "performance indicator, or benchmark, is one criterion underlying successful program or service performance" (p. S-5). Progress indicators measure the amount of perceived accomplishment within the context of creative activities such as painting, dancing, and musical composition (Hales, 1996).

Key processes. Kessler (1995) defines them as "The most critical processes to customer satisfaction and the survival of the organization" (p. 146).

Key (critical) success factors. Watson (1993) defines them as "those few activities where satisfactory performance is essential in order for a business to succeed" (p. 260).

Quality. Hittman (1993) defines it as "a continuous effort by all members of an organization to meet students' and other interested parties' needs and expectations" (p. 78).

Sub-processes (work processes). Camp (1995) defines them as processes "that are entirely within the control of a single function and can be changed as such" (p. 7).

Suitability. The quality or state of being appropriate, proper, or fitting (McKechnie, 1983) with regard to key processes and associated measures for implementing benchmarking for continuous improvement in higher education.

Uncertainty. The quality or state of not being clearly identified or defined (McKechnie, 1983) with regard to key processes and associated measures for implementing benchmarking for continuous improvement in higher education.

Zero-based institution. An institution that has no existing quality system (Fisher, 1995).

Assumptions

Survey research. A survey research plan was used to collect primary data applicable to a problem solution. It was assumed that survey research was representative of a problem solution.

Target population. The target population of the study was those colleges and universities (both zero-based institutions and committed to quality institutions) that are uncertain what key processes and associated measures are suitable for implementing benchmarking for continuous improvement. It was assumed that the target population was representative of definition validity and subsequently the research problem.

Access population. The access population of the study was the 220 universities and colleges of the 1995 American Society for Quality Control's Directory of Higher Education (Calek, 1995). It was assumed that the access population was representative of the target population.

Sample units. A judgement (purposive) nonprobability sampling technique was used to draw sample units from the access population of the study. It was assumed that the sample units were representative of the access and subsequent target populations.

Sample size. An experienced researcher's judgement and two required sample characteristics were used to select 49 institutions of higher education (22%) from the 220 access population elements of the study. It was assumed that the sample size was representative of population validity.

Questionnaire. The author developed a forty-four item questionnaire in order to measure the suitability of East Tennessee State University's Ten Key Processes and Thirty Four Measures with regard to higher education quality administrators. It was assumed that the questionnaire was representative of measurement validity.

Total response. A 53 percent total response was obtained from administration of the questionnaire. It was assumed that the total response was representative of the sample units.

Item response. It was assumed that an item response was representative of a truthful response.

Item agreement response. An 80 percent item agreement response was used to represent the suitability of a key process or associated measure. The author acknowledges that a citation advocating an agreement percentage for a decision making group representative of suitability was not available. Therefore, it was assumed that an item agreement response rate of 80 percent represents suitability.

Limitations

Inclusions. Quality administrators were asked to propose key processes and measures for inclusion in the ETSU Continuous Improvement Key Process Relationship Matrix. However, the study was limited to the collection of proposals only. The determination of which proposed items are suitable for inclusion was not an objective of this study and should be obtained through further research.

CHAPTER 2

LITERATURE REVIEW

The Elements

Continuous Improvement

The following elements have been identified by the author as being fundamental to a continuous improvement framework:

Leadership council. The creation of a leadership council is an important step in the development of continuous improvement program (Lewis & Smith, 1994). Consisting of senior leaders representing the major areas of an institution, the council is responsible for all aspects of a continuous improvement program (Lewis & Smith, 1994). The element of leadership is central to the concept of continuous improvement (Deming, 1986; Harris, 1992; Lewis & Smith, 1994; Seymour, 1992). Therefore, the first element of continuous improvement is a leadership council.

Mission statement. An institution's mission is its fundamental reason for existence (Fisher, 1995). The leadership council's first critical task is the identification and definition of an institutional mission (Lewis & Smith, 1994). According to Fisher (1995), a mission statement officially acknowledges an institution's purpose via a published document which is "shared with

faculty, staff, students, suppliers, customers, and the community" (p. 237). An institution's dedication to and comprehension of a mission statement provides a decision making framework within a continuous improvement program (Lozier & Teeter, 1993). Additionally, the development of an institution's mission statement serves to increase cooperation among members (Lewis & Smith, 1994). Therefore, the second element of continuous improvement is a mission statement.

Vision statement. An institution's vision, as defined by its leadership council, describes what it will resemble upon achievement of its goals (Lozier & Teeter, 1993). A vision statement officially acknowledges an institution's vision through a published document which is shared throughout the institution and community (Fisher, 1995). The absence of a vision statement will limit the advancements of an institution's continuous improvement program (Lozier & Teeter, 1993). Therefore, the third element of continuous improvement is a vision statement.

Values statement. An institution's values are the beliefs which provide a decision making framework for accomplishment of its mission (Lewis & Smith, 1994). According to Fisher (1995), a values statement officially acknowledges an institution's beliefs through a published document which is "shared with faculty, staff, students,

customers, suppliers, and the community" (p. 240). An institution's values are fundamental to the success of its mission and its subsequent continuous improvement program (Lewis & Smith, 1994). Therefore, the fourth element of continuous improvement is a values statement.

Goals statement. An institution's goals (critical success factors) represent the strategies for obtaining both short-term and long-term results (Fisher, 1995). A goals statement officially acknowledges an institution's goals through a published document which is shared throughout the institution and community (Fisher, 1995). Goals provide a framework that connect a continuous improvement program's strategic mission, vision, and values with departmental tactical activities (Lewis & Smith, 1994). Therefore, the fifth element of continuous improvement is a goals statement.

Benchmarking

According to Spendolini (1992), benchmarking is a "structured process" (p. 38). Therefore, its framework can be represented by a process model (Balm, 1992; Bogan & English, 1994; Boxwell, 1994; Camp, 1989, 1995; Karlof & Obstrum, 1995; Leibfried & McNair, 1992; and Watson, 1992, 1993). However, the existence of multiple process models creates uncertainty in determining which one truly represents the benchmarking process. To resolve this issue

Spendolini (1992) developed a generic five stage benchmarking process model that is a synthesis of twenty-four existing models. The five stages of Spendolini's Model (1992) determine what to benchmark, form a benchmarking team, identify benchmarking partners, collect and analyze benchmarking information, and take action. According to Camp (1995), two distinct benchmarking processes exist: the users process (i.e. Spendolini's five stage model) and the management process. A benchmarking team follows the users process in order to successfully complete a benchmarking project. Conversely, the management process supports the benchmarking team by ensuring an atmosphere conducive to business process improvement (Camp, 1995).

Because benchmarking is an advanced management tool, an organization must determine if its management framework has sufficient maturity to support benchmarking processes (Watson, 1993). If the outcomes of a benchmarking process are to be useful, they must be linked to an organization's mission, vision, values, and goals (Camp, 1995). Therefore, a continuous improvement program must be in place to support benchmarking.

Camp (1995) acknowledges that two approaches for a managing the benchmarking process are problem-based and process-based management. Initially, the management of benchmarking activities were ad hoc in nature, and responded to problems as they occurred. According to Camp (1995),

this problem-based management process was maintained by "customer feedback, the cost base, a desire to reduce error rates, high asset levels, the need to improve cycle times, or the like" (p. 5).

More recently organizations have recognized the need to manage benchmarking in order to generate improvements. Process-based benchmarking management focuses on improving those business processes that are related to goals which are vital to the success of an organization (Camp, 1995). According to Watson (1993), "Business processes are logical combinations of people, equipment, materials, and methods organized into work activities that produce desired outputs" (p. 56). Camp (1995) concludes that:

> It is the focus of benchmarking on the business process that has come to be accepted as the correct approach for benchmarking. Thus it is process benchmarking, not problem-based benchmarking, that is needed. (p. 7)

Therefore, the first element of benchmarking is a process-based management approach.

The first stage of Spendolini's (1992) Benchmarking Process Model (users process) determines what to benchmark. A variety of things can be selected for benchmarking however, because organizations have limited resources they should focus on the processes that offer the greatest return on investment (Watson, 1993).

Watson (1993) advocates that key business processes:

> are prime process candidates for benchmarking because they have a broader scope than specific business practices and are essential to achieving the critical success factors of an organization. (p. 56)

Therefore; the second element of benchmarking are key business processes.

Key process performance measures are the essential measurements for assessing the performance of a key process. According to Camp (1995) there are two types of process measures: post-process and in-process. Utilizing both post-process and in-process measures will increase the chances of recognizing the essential improvements that will close process performance gaps (Camp, 1995). Therefore, the third element of benchmarking are key process measures.

The second stage of Spendolini's (1992) Benchmarking Process Model forms a benchmarking team. Due to the amount of work involved with benchmarking, a team is essential for ensuring the success of a project (Spendolini, 1992). Therefore, the fourth element of benchmarking is a benchmarking team. A major task in forming a benchmarking team is to determine its members. Curtice (1995), DeToro (1995), and Watson (1993; 1992) advocate that process owners should be assigned to a benchmarking team. According to Watson (1993), a process owner is "the individual who possess managerial control over a particular business

process" (p. 261). Therefore, the fifth element of benchmaring are process owners.

The third stage of Spendolini's (1992) Benchmarking Process Model identifies benchmarking partners. The selection of the appropriate partners is essential to the success of a benchmarking project (Spendolini, 1992). Therefore, the sixth element of benchmarking is a listing of benchmarking partners or information sources.

The fourth stage of Spendolini's (1992) Benchmarking Process Model is the collection and analysis of benchmarking information. An organization must document its own organizational performance prior to external benchmarking (Spendolini, 1992). Therefore, the seventh element of benchmarking is documentation of internal products and processes.

The fifth stage of Spendolini's (1992) Benchmarking Process Model is to take action. The major task of a benchmarking team is the identification of improvement opportunities (Spendolini, 1992). Once these improvements have been identified, a benchmarking team must decide on what actions will be taken to implement improvements (Spendolini, 1992). Therefore, the eighth element of benchmarking is an action plan.

In summary, continuous improvement, a process-based management approach, key business processes, key process measures, a benchmarking team, process owners, a listing of

benchmarking partners or information sources, the documentation of internal products and processes, and an action plan are all necessary to successfully implementing benchmarking for continuous improvement in higher education.

Identification of key processes and associated measures are the essential elements by which institutions of higher education can implement benchmarking (International Forum for Quality in Higher Education, 1995). This research focused on these elements to provide a basis for initiating the benchmarking journey in higher education.

CHAPTER 3

METHODOLOGY

The Population

Target. The target population of the study was those colleges and universities (both zero-based institutions and committed to quality institutions) that are uncertain what key processes and associated measures are suitable for implementing benchmarking for continuous improvement.

Access. The access population of the study was the 220 universities and colleges of the 1995 American Society for Quality Control Directory of Higher Education (Calek, 1995).

The Sample

Those quality administrators possessing expert knowledge of key processes and measures of higher education were the desired sample units of the survey. Because of the specific nature of this attribute a nonprobability judgement (purposive) technique was utilized to draw the sample units from the access population. This technique stipulates that an experienced researcher perform the drawing by judging population elements against attributes of the desired sample units. Dr. James A. Hales was selected to perform the drawing due to his inherent familiarity with institutions implementing quality improvement programs. The number of years an institution has been implementing quality

improvement programs and the key informant positions of president, vice president, provost, and director of quality were selected as judgement attributes of the desired sample units. Because a hypothetical construct relating attribute to knowledge was not available it was necessary to assume that the sample judgment attributes would provide units knowledgeable of key processes and measures of higher education. Forty-nine institutions of higher education were selected to represent the sample units of the survey.

The Questionnaire

Construction

The suitability of the ETSU Continuous Improvement Key Process Relationship Matrix was assessed with a forty-four item, self-administered questionnaire (Appendix C) developed for use in this study. The response items were taken directly from the East Tennessee State University Key Process Relationship Matrix (Appendix A) and consisted of 10 key processes and 34 associated measures. The rating scale was constructed by assigning a simple dichotomy of agree or disagree to each item. An open ended format was used to provide space for proposing "other" items if participants desired.

Communication

A letter of transmittal (Appendix B) was composed for the survey portfolio of the study. According to Erdos (1970), a letter of transmittal should (1) be grammatically correct; (2) not exceed one page in length; (3) be written in the second person; (4) contain a salutation with the recipient's name and title; (5) request assistance from the recipient; (6) state the purpose of and describe the incentive for responding if any; (7) explain the purpose and significance of the research; (8) explain how the recipient may benefit from the research; (9) state the amount of time required to complete the survey; (10) state the level of difficulty in responding to the survey; (11) state the degree of respondent confidentiality; (12) state the deadline for responding if any; (13) state the method(s) for returning the survey; (14) thank the recipients for their efforts; (15) acknowledge the importance of the sender; (16) acknowledge the importance of the sender's organization; (17) contain a closure with the sender's signature; (18) be separate from the questionnaire; and (19) avoid inducing biased responses from the recipients. These stipulations were met by the transmittal letter (Appendix B) that was composed for the survey portfolio of the study.

Distribution

On January 19, 1995 the survey portfolios consisting of a transmittal letter, questionnaire, return envelope, return postcard, and return postage (for foreign participants only) were mailed.

The Data

Tabulations

Upon receipt of a completed questionnaire the author reviewed it to ensure that the respondents had interpreted the questionnaire correctly and responded accordingly. Next, the questionnaire was coded by assigning an identification number. Finally, a simple tally, counting the number of responses to an item and placing them in a frequency distribution, was performed.

Calculations

Total response. A 53 percent total response (26 out of 49) was obtained from the administration of the questionnaire. The percentage of total response was calculated by dividing the number of questionnaires returned by the number of sample units.

Item agreement response. The percentage of respondents agreeing with an item was calculated by dividing the number of item agreement responses by the number of total responses.

Item disagreement response. The percentage of respondents disagreeing with an item was calculated by dividing the number of item disagreement responses by the number of total responses.

Item nonresponse. The percentage of respondents not responding to an item was calculated by dividing the number of item nonresponses by the number of total responses.

Comparisons

An item agreement response percentage of 80% or greater was representative of suitability. All item response averages were compared with this 80% suitability rate.

CHAPTER 4

DISCUSSION

The Information

Quantitative

The following information was obtained from the survey research. The findings reveal that suitability was achieved for eight of ETSU's Ten Key Processes. This indicates that these eight processes can serve as a practical framework for implementing continuous improvement and a subsequent benchmarking process in higher education. A discussion of each key process and associated findings from this study now follows:

The key process of Teaching and Learning represents the collective activities of curriculum development, academic support for instruction, student life program development, professional development and evaluation, and continuing studies. Table 1 shows that 80% agree this is a suitable process for implementing benchmarking for continuous improvement in higher education. Appropriate measures that may be used as performance indicators are: student exit examinations with 88% agreeing, student retention data with 84% agreeing, and student entrance examinations with 76% agreeing.

TABLE 1

ITEM RESPONSES: TEACHING AND LEARNING

	Response		
Item	Agree	Disagree	None
Process			
Teaching/Learning	0.88	0.00	0.12
Measure			
Student exit examinations	0.88	0.08	0.04
Student retention data	0.84	0.08	0.08
Student entrance examinations	0.76	0.20	0.04

Note. An item agreement percentage of 80% or greater is representative of suitability.

The key process of Enrollment Management represents the collective activities of recruitment, admission, financial aid, orientation, advisement, registration, scheduling, and housing. Table 2 shows that 88% agree this is a suitable process for implementing benchmarking for continuous improvement in higher education. Appropriate measures that may be used as performance indicators are: retention data with 92% agreeing, student enrollment and student satisfaction both with 88% agreeing, and admissions growth, diversity data, and student success, each with 80% agreeing.

TABLE 2

ITEM RESPONSES: ENROLLMENT MANAGEMENT

	Response		
Item	Agree	Disagree	None
Process			
Enrollment management	0.88	0.00	0.12
Measure			
Retention data	0.92	0.00	0.08
Student enrollment	0.88	0.00	0.12
Student satisfaction	0.88	0.04	0.08
Admissions growth	0.80	0.08	0.12
Diversity data	0.80	0.08	0.12
Student success	0.80	0.04	0.16

Note. An item agreement percentage of 80% or greater is representative of suitability.

The key process of Enhancement of the Cultural Environment represents the collective activities of cultural enrichment, promotion of regional culture, teaching cultural diversity, and international studies. Table 3 shows that 80% agree this is a suitable process for implementing benchmarking for continuous improvement in higher education. However, direct measures were more elusive, perhaps because enhancement of the cultural environment is difficult to measure on an absolute scale. The study findings are that 72% agree with the number of persons attending, 68% agree with number of events, and 56% agree with peer institution comparisons. Further study is recommended to identify performance indicators rather than absolute measures.

TABLE 3

ITEM RESPONSES: ENHANCEMENT OF THE CULTURAL ENVIRONMENT

	Response		
Item	Agree	Disagree	None
Process			
Cultural environment enhancement	0.80	0.12	0.08
Measure			
Number of persons attending	0.72	0.16	0.12
Number of events	0.68	0.16	0.16
Peer institution comparisons	0.56	0.28	0.16

Note. An item agreement percentage of 80% or greater is representative of suitability.

The key process of Strategic Planning, Development, and Budgeting collectively represents long-term, strategic, master, and outcome assessment activities. Table 4 shows that 84% agree this is a suitable process for implementing benchmarking for continuous improvement in higher education. Goal achievement, with 88% agreeing, performance on outcome, with 84% agreeing, and student and alumni surveys, with 84% agreeing, received the highest item agreement response rates. Resource availability, with 72% agreeing, and peer comparisons, with 68% agreeing, are also indicators.

TABLE 4

ITEM RESPONSES: STRATEGIC PLANNING/DEVELOPMENT/BUDGETING

	Response		
Item	Agree	Disagree	None
Process			
Strategic planning development and budgeting	0.84	0.08	0.08
Measure			
Goal achievement	0.88	0.00	0.12
Student/alumni surveys	0.84	0.04	0.12
Performance/outcome measures	0.84	0.00	0.16
Resource availability	0.72	0.16	0.12
Peer institution comparisons	0.68	0.16	0.16

Note. An item agreement percentage of 80% or greater is representative of suitability.

The key process of Resource Acquisition, Development, Management, and Accountability collectively represents fiscal, human resource, and physical activities. Table 5 shows that 84% agree this is a suitable process for implementing benchmarking for continuous improvement in higher education. Appropriate measures achieving agreement are: peer institution comparisons, with 88% agreeing, faculty and staff satisfaction, with 84% agreeing, and requested vs. achieved, with 80% agreeing.

TABLE 5

ITEM RESPONSES: RESOURCE ACQUISITION/DEVELOPMENT MANAGEMENT AND ACCOUNTABILITY

	Response		
Item	Agree	Disagree	None
Process			
Resource acquisition, development management and accountability	0.84	0.04	0.12
Measure			
Peer institution comparisons	0.88	0.04	0.08
Faculty/staff satisfaction	0.84	0.04	0.12
Requested vs. achieved	0.80	0.04	0.16

Note. An item agreement percentage of 80% or greater is representative of suitability.

The key process of Institutional Management and Governance represents the collective activities of communications, data management, internal governance, and external governance. Table 6 shows that 84% agree this is a suitable process for implementing benchmarking for continuous improvement in higher education. Appropriate measures and performance indicators are faculty and staff satisfaction, with 92% agreeing, program accreditation, with 88% agreeing, mission and goal accomplishment, with 84% agreeing, and peer institution comparisons, with 76% agreeing.

TABLE 6

ITEM RESPONSES: INSTITUTIONAL MANAGEMENT/GOVERNANCE

	Response		
Item	Agree	Disagree	None
Process			
Institutional management governance	0.84	0.08	0.08
Measure			
Faculty staff/satisfaction	0.92	0.00	0.08
Program accreditation	0.88	0.00	0.12
Mission/goal accomplishment	0.84	0.04	0.12
Peer institution comparisons	0.76	0.12	0.12

Note. An item agreement percentage of 80% or greater is representative of suitability.

The key process of Research, Scholarship, and Creative Activity includes research grant or contract development. Table 7 shows that 80% agree this is a suitable process for implementing benchmarking for continuous improvement in higher education. These processes present difficulties in terms of absolute measurement as indicated by the item agreement response of 56% for juried shows and performances and 68% for the number of publications and presentations. Further study is recommended to identify suitable indicators for assessing creative processes in higher education.

TABLE 7

ITEM RESPONSES: RESEARCH/SCHOLARSHIP/CREATIVE ACTIVITY

	Response		
Item	Agree	Disagree	None
Process			
Research/scholarship/creativity	0.80	0.04	0.16
Measure			
Peer institution comparisons	0.84	0.04	0.12
Internal support	0.76	0.08	0.16
Amount of dollars generated	0.76	0.08	0.16
Number of grants received	0.72	0.12	0.16
Number of publications	0.68	0.16	0.16
Juried shows/performances	0.56	0.16	0.28

Note. An item agreement percentage of 80% or greater is representative of suitability.

The key process of Service (Community Outreach) represents the collective activities of community service, foreign institution partnerships, and alumni relations. Table 8 shows that 84% agree this is a suitable process for implementing benchmarking for continuous improvement in higher education. However, absolute measures of this process are difficult to identify with only 60% agreeing with peer comparisons and 76% with user satisfaction. An area for further investigation is also suggested here to identify performance indicators that may be more helpful in implementing the key process of service within the context of continuous improvement in higher education.

TABLE 8

ITEM RESPONSES: SERVICE (COMMUNITY OUTREACH)

	Response		
Item	Agree	Disagree	None
Process			
Service (Community Outreach)	0.84	0.04	0.12
Measure			
User satisfaction	0.76	0.08	0.16
Peer institution comparisons	0.60	0.20	0.20

Note. An item agreement percentage of 80% or greater is representative of suitability.

The key process of Developing and Maintaining a Learning Environment represents the collective activities of student services, career development and placement, special programs, and intercollegiate athletics. Table 9 shows that 76% agree that this is a suitable process for implementing benchmarking for continuous improvement in higher education. This process did not achieve the established suitability rate of 80%. However, student and alumni satisfaction achieved an 84% agreement response as a measure of this process. Further study is recommended to determine what modifications are required to improve the suitability of this process.

TABLE 9

ITEM RESPONSES: DEVELOPING/MAINTAINING LEARNING ENVIRONMENT

	Response		
Item	Agree	Disagree	None
Process			
Developing/maintaining a learning environment	0.76	0.08	0.16
Measure			
Student/alumni satisfaction	0.84	0.04	0.12

Note. An item agreement percentage of 80% or greater is representative of suitability.

The key process of Communicating the Institutional Image represents the collective activities of media relations, campus publications, audiovisual productions, community relations, marketing and promotions, internal communications, and institutional radio. Table 10 shows that 76% agree this is a suitable process for implementing benchmarking for continuous improvement in higher education. Neither the process nor the measure, (peer institution comparisons with 64% agreeing), achieved the established suitability rate of 80%. Further study is recommended to determine what modifications are required to improve the suitability of this process.

TABLE 10

ITEM RESPONSES: COMMUNICATING THE INSTITUTIONAL IMAGE

	Response		
Item	Agree	Disagree	None
Process			
Communicating the institutional image	0.76	0.08	0.16
Measure			
Peer institution comparisons	0.64	0.16	0.20

Note. An item agreement percentage of 80% or greater is representative of suitability.

Qualitative

The following information was provided by quality administrators in response to the second survey research question: "What other key processes and measures do you propose for inclusion?"

TABLE 11-

ITEM RESPONSES: OTHER TEACHING AND LEARNING MEASURES

Amount of student participation in classroom learning system (Does the instructor ask for student input?)
Amount of curriculum compliance with accreditation standards
Amount of time and budget for staff and faculty development
Amount of academic support for instruction (survey) (1.4)
Amount of classroom improvements (1.6)
Amount of faculty development (in number of hours)
Amount of faculty satisfaction
Amount of team utilization in the classroom
Amount of curriculum development articulation
Approval of curriculum developments by advisory board
Amount of development/revision/benchmarking (1.1) [3]
Benchmarks of best-in-class in each area (1.4-1.7)
Cycle time of new program development process
Final examination data from disciplines
High school data: class ranking, grade point average course work

(table continues)

TABLE 11 (continued)

ITEM RESPONSES: OTHER TEACHING AND LEARNING MEASURES

Number of faculty teaching awards
Number of professionally accredited programs
Number of students per class (average)
Pre/post assessment of writing portfolios, critical thinking problem solving [2]
Percent of students scoring above 50th & 80th percentiles on
Engineer in Training (EIT) Examination
Graduate Record Examination (GRE)
Graduate Management Admission Test (GMAT)
Medical College Admission Test (MCAT)
Percentage of students attending graduate school
Quality of capstone courses (1.3)
Quality of faculty performance (by student ratings)
Quality of alumni performance in jobs/graduate schools
Quality of student self-assessments/reports (1.3)
Quality of faculty evaluations (by trend analysis) (1.7)
Quality of faculty credentials
Ratio of students-to-faculty
Rate of graduation by discipline, ethnicity, and time [2]
Rate of graduate employment [3]
Rate of faculty turnover
Standardization of examinations (if possible)
Student retention data (qualified by student goals)

(table continues)

TABLE 11 (continued)

ITEM RESPONSES: OTHER TEACHING AND LEARNING MEASURES

Student activities index
Satisfaction of employers five years after graduation
Satisfaction of students with the learning process [3]

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 12

ITEM RESPONSES: OTHER ENROLLMENT MANAGEMENT MEASURES

Amount of student admission expense
Amount of student academic success (subjective) [2]
Benchmarks of best-in-class processes
Cycle time of application/inquiry processes [2]
Diversity data of faculty, staff, administration, and students (goal dependent)
Percentage of in-state/out-of-state/international students
Rate of graduate placement
Ratio of achieved-to-targeted admissions [3]
Ratio of achieved-to-targeted enrollments
Ratio of scholarship-to-nonscholarship enrollments
Ratio of scholarship endowments-to-recipients
Ratio of scholarship recipients-to-matriculants
Ratio of males-to-females
Satisfaction of faculty/students with enrollment process [4]
Statistical data of Student Achievement Test (SAT) [2]
Survey of student class scheduling preference (2.7)
Survey of transferred/accepted but not enrolled students

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 13

ITEM RESPONSES: OTHER ENHANCEMENT OF THE CULTURAL ENVIRONMENT MEASURES

Amount of budget allocated
Amount of receptiveness to other cultures
Diversity data of event attendees
Number of business partnerships
Number of countries visited or represented
Number of english as a second language/minority students
Number of racial conflicts
Number of required off site-experiences
Percentage of international students
Percentage of students traveling abroad
Quality of events and evaluations [2]
Rate of student co-curricular participation
Survey of climate
Survey of students using focus groups
Type/variety/diversity of events [3]

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 14

ITEM RESPONSES: OTHER STRATEGIC

PLANNING/DEVELOPMENT/BUDGETING/MEASURES

Amount of campus involvement in accomplishing goals
Quality of institutional alignment in support of goals
Quality of formal annual built-in reviews
Rate of participation in annual fund
Survey of faculty/staff/administration
Strategic plan/university wide/department level
Satisfaction of stakeholders (legislators/businesses) [2]

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 15

ITEM RESPONSES: OTHER RESOURCE

ACQUISITION/DEVELOPMENT/MANAGEMENT/ACCOUNTABILITY MEASURES

Amount of advancement budget/student or revenue
Amount of increase in tuition/fee costs (trend analysis)
Amount of budget deficits
Amount of alumni support revenue
Amount of salary equity
Amount of increase in overtime (trend analysis)
Amount of financial fundraising capability (study)

(table continues)

TABLE 15 (continued)

ITEM RESPONSES: OTHER RESOURCE

ACQUISITION/DEVELOPMENT/MANAGEMENT/ACCOUNTABILITY MEASURES

Cost of deferred maintenance [2]
Cost per full time equivalent (FTE)
National Association of College and University Business Officers, administrative benchmarks.
Number of learning opportunities for staff
Percentage of budget in payroll benefits
Quality of faculty/staff (salary comparisons)
Quality of management letter/audit
Quality (soundness) of performance appraisal system
Rate of faculty/staff turnover [2]
Ratio of facility square footage-to-maintenance costs
Ratio of faculty-to-staff
Ratio of requested-to-granted funding
Ratio of tuition dollars-to-non-tuition sources
Ratio of students-to-fees
Ratio of full time-to-part time students
Ratio of instructional-to-administration accounts
Satisfaction of faculty/staff/alumni using an annual survey

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 16

ITEM RESPONSES: OTHER INSTITUTIONAL MANAGEMENT/GOVERNANCE MEASURES

Assessment of organizational climate (shared vision) [2]
Content analysis of issues addressed and decisions made (minutes of meetings could be analyzed)
External benchmarking
Number of cutting edge programs
Quality of institutional reputation
Quality of centers for excellence
Satisfaction of students

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 17

ITEM RESPONSES: OTHER RESEARCH/SCHOLARSHIP AND CREATIVE ACTIVITY MEASURES

Amount of faculty output (all types)
Amount of information requested regarding projects
Amount of undergraduate student research
Amount of goal achievement
Amount of professional recognition earned by faculty/staff (e.g. fellow status in learned society)
Amount of new program development/support [2]
Amount of knowledge (created/applied) impact
Amount of scholarship impact
Number of students supported
Number of student awards
Number of grants (by department)
Number of consulting activities for business/government [2]
Percentage of academic program budget used for research [2]
Percentage of faculty receiving monetary awards
Percentage of faculty in public presentations/performances
Percentage of student involved in research
Publications per dollar

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 18

ITEM RESPONSE: OTHER SERVICE (COMMUNITY OUTREACH) MEASURES

Assessment of needs
Amount of contributions by local government and business
Amount of applied knowledge impact
Amount of internal service within institution
Amount of economic impact
Amount of service impact on community
Amount of budgeting/staffing to support outreach
Diversity of institutions and languages
Number of activities
Number of country and foreign institution partnerships [2]
Number of staff/faculty/student participants [3]
Number of community service hours
Number of joint ventures with businesses
Number of new initiatives/programs generated [2]
Rate of graduation/retention
Quality of community perception of the institution
Rate of participation
Satisfaction of stakeholders
Study of image
Survey of community/region

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 19

ITEM RESPONSES: OTHER DEVELOPING/MAINTAINING LEARNING ENVIRONMENT MEASURES

Amount of student usage and participation
Number of interviews per student
Number of faculty publications in learning
Peer institutions comparisons [2]
Percentage of students in research/presentations
Peer composition re: electronic classrooms
Rate of student placement [4]
Retention data
Satisfaction of community/users/students/employers [2]
Survey of climate
Quality of general and athletic student academic performance
Number of social problems

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 20

ITEM RESPONSES: OTHER COMMUNICATING THE INSTITUTIONAL IMAGE MEASURES

Amount of community support
Amount of national recognition published in external media.
Amount of marketing budget
Amount of student/faculty recruitment
Number of press release appearances/feature articles
Number of awards/honors in national competitions
Quality of student perception
Quality of institutional image
Quality of publications using content analysis
Research studies of market as required
Ratio of positive-to-negative local/external media coverage
Surveys of public/students/image/marketing/customs
Satisfaction of faculty/staff/stakeholders/alumni [6]
Satisfaction of advisory boards using focus groups

Note. Measures have been edited for clarity as required.

[ ] = number of respondents proposing measure;

( ) = sub-process identification number. A listing of sub-processes is located in Appendix A.

TABLE 21

ITEM RESPONSES: PROPOSED KEY PROCESSES AND MEASURES

Key Process
Faculty & staff leadership development
Measures
Participation in growth activities
Ratio of sought-to-attained leadership positions
Key Process
Placement
Measures
Satisfaction of alumni
Percentage of students using services
Percentage of students attending graduate schools
Key Process
Student success
Measures
Percentage of students graduating in 4 or more years
Rate of graduate school acceptance
Job placement data
Key Process
Innovative program developed
Measures
Number of new initiators in learning environment
reputation building
Percentage of alumni who refer family and friends

(table continues)

TABLE 21 (continued)

ITEM RESPONSES: PROPOSED KEY PROCESSES AND MEASURES

Key Process
Promoting teaching and curriculum development as an alternative to research in esoteric areas for proof of scholarly achievement
Measures
Number of publications in learning fields
Number of full professors promoted based on scholarship in earning promotion
Key Process
Promotion of interdisciplinary team work
Measure
Number of cross-college team-taught courses
Number of cross-college senior projects
Number of industry and business sponsored interdisciplinary team projects
Key Process
Promotion of the university as a learning organization
Measures
Number of people rewarded for innovative process improvement
Number of workshops/training events sponsored for faculty and staff
Number of training hours per faculty and staff members

(table continues)

TABLE 21 (continued)

ITEM RESPONSES: PROPOSED KEY PROCESSES AND MEASURES

Key Process
Institutional research
Measures
Integrated assessment plan status
Staffing and budget to support assessment
Key Process
Financial performance
Measures
Fund balance growth
Key Process
Quality of residential experience
Measure
Student surveys
Key Process
Quality of dining services (other support services)
Measures
Student surveys (relates to teaching and learning)
Student satisfaction with teaching, advising, general education courses, major courses
Key Process
Student selection
Academic and administrative staff selection
Academic and administrative staff development

(table continues)

TABLE 21 (continued)

ITEM RESPONSES: PROPOSED KEY PROCESSES AND MEASURES

Key Process
Faculty and staff satisfaction
Measure
Organizational practices assessment

Quality administrators also provided the following comments in response to the second survey research question.

1. You may wish to refer to the NACUBO benchmarking project. No need to reinvent or repeat what colleges and universities have already agreed to nationally about key processes and measures.
2. Rather than peer institutions, try to identify one or two best-in-class for particular process.
3. Be aware of different missions for different types of institutions according to two-year and four-year Carnegie Classifications.

In response to this comment the author has provided the Carnegie Classification Codes of the study participants in the Directory of Respondents (Appendix D).

CHAPTER 5

CONCLUSION

The Findings

The purpose of this study was to (1) identify; and (2) verify key processes and associated measures that can help higher education quality administrators implement a continuous improvement program and subsequent benchmarking process for their respective institutions. The study findings indicated that an 80% or greater agreement rate was obtained for 8 of the 10 key processes and for 16 of the 34 associated measures. Based on these results the author concludes that those key processes and measures obtaining an 80% or greater agreement rate can serve institutions requiring a framework for implementing benchmarking for continuous improvement in higher education.

Teaching and learning and enrollment management obtained the highest agreement rate (88%) as a key processes. Student retention data (84%) and exit examinations (88%) were identified as appropriate measures for benchmarking teaching and learning. Retention data (92%) and student enrollment (88%) and student satisfaction (88%) were cited as appropriate measures for benchmarking enrollment management.

It was difficult to find absolute measures for key processes that were creative and holistic in nature. For example, 80% agreed that enhancement of the cultural environment was a key process. However, they did not find the measures of number of events (68%) or peer institutions comparisons (56%) to be comprehensive. The same findings were true for research, scholarship, and creative activity along with service and community outreach. Although 80% and 84% respectfully agreed that these are key processes, absolute measures (except for peer institution comparisons at 84%) were difficult to find. This suggested an important area for further study. Perhaps performance indicators, rather than absolute measures, should be sought for the creative processes that are fundamental to success in higher education.

Within the context of benchmarking for continuous improvement in higher education, this study has identified eight key processes and sixteen measures that should be in any framework for implementation. The areas for further refinement are consistent with these findings while helping to facilitate continuous improvement without overly restricting the creative dimension of higher education.

The Recommendations

Based upon the findings described above the author recommends performing an additional study. The proposed objective of this study would be to (1) conduct a survey of

quality administrators to collect both performance and progress indicators of key processes; and (2) conduct a second survey to achieve quality administrator consensus of the proposed indicators. Tables 11-21 contained in this study can serve as a basis for this research.

It is also recommended that a dissertation format be used to conduct a more extensive higher education benchmarking study. The objective of this study would be to (1) collect actual benchmarking data using the East Tennessee State University Key Processes and Measures; (2) compare this data with another institution that has collected similar data; and (3) identify problems resulting from the exchange and prescribe solutions for improvement.

REFERENCES

REFERENCES

Andrews, W. D. (1995). Becoming a university of choice: 1995 and beyond. Unpublished manuscript, East Tennessee State University.

Balm, G. J. (1992). Benchmarking: A practitioner's guide for becoming and staying best of the best. Schaumburg, IL: Quality and Productivity Management Association (QMPA).

Bemowski, K. (1991, October). Restoring the pillars of higher education. Quality Progress, 24(10), 37-41.

Bradley, L. H. (1993). Total Quality Management for Schools. Lancaster, PA: Technomic.

Bogan, C. E., & English, M. J. (1994). Benchmarking for best practices: Winning through innovative adaptation. New York, NY: McGraw-Hill.

Boxwell, R. J. (1994). Benchmarking for competitive advantage. New York NY: McGraw-Hill.

Butts, R. F. (1969). Education. (Vol. 6, pp. 56-64). Chicago: The World Book Encyclopedia

Calek, A. (1995, September). Fifth Quality in Education Listing. Quality Progress, 28(9), 27-77.

Camp, R. C. (1989). The search for industry best practices that lead to superior performance. Milwaukee, WI: American Society for Quality Control (ASQC) Press.

Camp, R. C. (1995). Business process benchmarking: Finding and implementing best practices. Milwaukee, WI: American Society for Quality Control Quality (ASQC) Press.

Carnegie Foundation for the Advancement of Teaching. (1994). A classification of institutions of higher education (Tech. Rep. No. LA227.4.C53). Ewing, NJ: California, Princeton Fulfillment Services.

Clark, K. L. (1993). Benchmarking as a global strategy for improving instruction in higher education. Paper presented at the International Conference on New Concepts in Higher Education, Phoenix, AZ.

Curtice, R. M. (1995, October) Owner's manual. Chief Information Officer, 5(6), 30-32.

Dabney, F., Lassila, L., & Collins, T. (1995). Institutional and program assessment benchmarking. Poster session presented at the annual meeting of the Engineering Technology Leadership Institute, Ogden, UT.

Deming, W. E. (1986). Out of the crisis. Cambridge, MA: Massachusetts Institute of Technology, Center for Advanced Engineering Study.

DeToro, I. (1995, January). The 10 pitfalls of benchmarking. Quality Progress, 28(1), 61-63.

Erdos, P. L. (1970). Professional mail surveys. New York, NY: McGraw-Hill.

Fischer, R. J. (1994, September). An overview of performance measurement. Public Management, 76(7), S2-S8

Fisher, D. C. (1995). Baldrige on campus: The assessment workbook for higher education. New York, NY: Quality Resources.

Good, C. V. (1973). Dictionary of Higher Education. New York, NY: McGraw-Hill.

Harris, J. W. (in press). Key concepts of quality improvement for higher education. In Harris, J. W., & Baggett, J. M. (Eds.), Quality quest in the academic process. Birmingham, AL: Samford University.

Hittman, J. A. (1993, October) TQM and CQI in postsecondary education. Quality Progress, 26(10), 77-80.

Hull, W. E. (in press). The quality quest in academia. In Harris, J. W., & Baggett, J. M. (Eds.), Quality quest in the academic process. Birmingham, AL: Samford University.

International Forum for Quality in Higher Education (1995). Benchmarking Practicum. Port Orange, FL: Author.

Karlof, B., & Ostblom, S. (1993). Benchmarking: A signpost to excellence in quality and productivity. New York, NY: John Wiley & Sons.

Kaufman, R., & Zahn, D. (1993). Quality management plus: The continuous improvement of education. Newbury Park, CA: Corwin Press.

Kessler, S. (1995). Total quality service: a simplified approach to using the Baldrige Award criteria. Milwaukee, WI: American Society for Quality Control (ASQC) Press.

Leibfried, K. H. J., & McNair, C. J. (1992). Benchmarking: A tool for continuous improvement. New York, NY: HarperCollins.

Lewis, R. G., & Smith D. H. (1994). Total Quality in higher education. Delray Beach, FL: St. Lucie Press.

McKechnie, J.L. (1983). Webster's New Universal Unabridged Dictionary. New York, NY: Simon & Schuster.

Millett, J. D. (1969). Universities and colleges. (Vol. 19, pp. 165-166). Chicago: The World Book Encyclopedia.

Rodenhouse, M. P. (Ed.). (1995). 1996 Higher Education Directory (14th ed.). Falls Church, VA: Higher Education Publications.

Seymour, D. T. (1992). On Q: Causing quality in higher education. New York, NY: Macmillan.

Spendolini, M. J. (1992). The Benchmarking Book. New York, NY: American Management Association.

Teeter, D. J., & Lozier, G. G. (in press). Six foundations of Total Quality Management. In Teeter, D. J., & Lozier, G. G. (Eds.), Pursuit of quality in higher education: Case studies in Total Quality Management: No. 78 New directions for institutional research. San Francisco, CA: Jossey-Bass.

Watson, G. H. (1993). Strategic benchmarking: How to rate your company's performance against the world's best. New York, NY: John Wiley & Sons.

Watson, G. H. (1992). The benchmarking workbook: Adapting best practices for performance improvement. Portland, OR: Productivity Press.

Wilcox, R. (1992). A study of the W. Edwards Deming Total Quality Management Concept as it applies to education in Tennessee. Doctoral dissertation, East Tennessee State University.

APPENDICES

APPENDIX A

ETSU MATRIX OF KEY PROCESS RELATIONSHIPS

GLOSSARY OF TERMS:

AA	Academic Affairs
AD	Assistant Dean
AREM	Admissions, Retention, & Enrollment Management
AVP	Associate Vice President
BF	Business & Finance
CAPS	Center for Adult Programs & Services
CASS	Center for Appalachian Studies & Services
COM	College of Medicine
CSPS	Continuing Studies & Public Service
DGS	Dean of the School of Graduate Studies
DO	Director of
EEO/AAO	Equal Employment Opportunity/Affirmative Action Officer
FAE	Faculty Activity Evaluation
FAP	Faculty Activity Plan
FAR	Faculty Activity Report
HA	Health Affairs
HR	Human Resources
ICGME	Institution Committee on Graduate Medical Education
IEP	Institutional Effectiveness & Planning
IR	Information Resources
MEAC	Medical Education Assistance Corporation
MSEC	Medical Student Education Committee
PFAA	Performance Funding & Academic Assessment
SA	Student Affairs
SAC	Student Activities Center
SAI	Student Assessment of Instruction
TLC	Teaching & Learning Center
UA	University Advancement
UR	University Relations
VP	Vice President
VPs	All Vice Presidents

KEY SUCCESS FACTORS:

1. Educate students to become responsible, enlightened, & productive citizens.
2. Conduct scholarship that improves the human condition.
3. Serve business, education, government, health care systems, community.
4. Enhance the cultural environment of the region.
5. Improve stewardship and institutional effectiveness.
6. Improve resource acquisition (human & financial).

TABLE 22

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
1, 2, 3, 4	1.0.0.0 Teaching/Learning	VPAA, VPHA, VPSA		Entrance/Exit Exams, Retention Data	IEP
	1.1.0.0 Curriculum Development	VPs	Faculty Chairs Deans	Employer feedback Accreditation Program Review Student/Graduate satisfaction Performance Funding	Deans/Chairs DOPFAA/MSEC/ICGME Office of Academic Affairs DGS
	1.2.0.0 Teaching	VPs	DOTLC Faculty Chairs	SAI Peer review TLC participation	Deans Chairs IEP
	1.3.0.0 Learning	VPs	Students	All testing/ certification exams Performance Funding	DOPFAA/IEP/MSEC
	1.4.0.0 Academic support for instruction	VPs	Deans Directors	Peer Review Student Satisfaction Use of TLC SAI Performance Funding	DOPFAA Directors IEP
	1.4.1.0 Library & Related Support Services	VPs	Dean of Libraries DO Medical Library	Adequacy of collections (quality/quantity) Accreditation/ standards Satisfaction surveys Technology initiatives	Dean of Libraries DO Medical Library

(table continues)

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TABLE 22 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
	1.4.2.0 Academic Computer and Network Support and Training Services (Telecommunications)	VPAA	AVPIR ADIR-COM DO Computer Services DO Telecommunications Chairs	Education/training User satisfaction Accessibility Technical support adequacy Accreditation/ standards	AVPIR ADIR-COM DO Computer Services DO Tele-communications
	1.4.3.0 Labs to Support Instruction	Deans VPAA	Chairs	Currency User Satisfaction	Chairs
	1.4.4.0 Distance Education (ITV) Services	VPs	DO Distance Education Deans Chairs Faculty	# of people served User satisfaction Technical support adequacy Accreditation/ standards Peer institution comparison	Director
	1.5.0.0 Student Life Program Development	VPs	AVPSA DO Student Activities Center DO Counseling Center	Student Satisfaction Peer Institution Comparison Performance Funding	DOPFAA IEP AVPSA
	1.6.0.0 Professional Development (Faculty)	VPs	Deans Directors Chairs Faculty TLC	Use of development opportunities Retention Promotion Participation Faculty/Staff satisfaction	Deans Chairs Directors

(table continues)

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TABLE 22 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
	1.7.0.0 Faculty Evaluation	VPAA VPHA			
	1.7.1.0 Annual Evaluation	VPAA VPHA	Faculty/Chairs/Deans	FAP/FAR/FAE	Chairs/Deans
	1.7.2.0 Tenure Evaluation	President/TBR	Faculty/Chairs/Deans VPAA/VPHA	FAP/FAR/FAE Peer evaluation	President's Office Personnel Office
	1.7.3.0 Promotion Evaluation	President/TBR	Faculty/Chairs/Deans VPAA/VPHA	FAP/FAR/FAE Peer evaluation	President's Office Personnel Office
	1.8.0.0 Continuing Studies	VPAA	AVPCSPS	# programs offered # people served User satisfaction	AVPCSPS

TABLE 23

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
1. 1	2.0.0.0 Enrollment Management	VPAA, VPHA, VPSA		Enrollment/Admissions growth Student satisfaction/ Diversity Student success/ Retention	IEP
	2.1.0.0 Recruitment (Marketing)	VPs	AVPCSPS/DGS/AVPAREM AD Admissions-COM	Ratio of school contacts/ applications User satisfaction	AVPAREM AD Admissions-COM
	2.2.0.0 Admission	VPs	DGS/AVPAREM Deans/Chairs/Faculty AD Admissions-COM DO Developmental Studies	Ratio admitted/ enrolled Student Profile User satisfaction Diversity data	AVPAREM COM Dean DGS
	2.3.0.0 Financial Aid	VPs COM Dean	AVPAREM/DO Financial Aid DO Financial Assista ce-COM Financial Aid Committees Deans/Chairs /DGS	# student awards Award composition (packaging) User satisfaction	Financial Aid Office DO Financial Assistance-COM
	2.4.0.0 Orientation	VPAA VPHA VPSA	AVPSA ADSA-COM DGS AVPAREM DOCAPS	Participant evaluation Persistence to graduation Retention data # of participants	AVPSA ADSA-COM DGS AVPAREM DOCAPS

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TABLE 23 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
	2.5.0.0 Advisement	VPs	AVPAREM DO Center for Undeclared Majors Office of Developmental Studies Faculty College Advisement Centers SA Staff Coordinators, Off-campus sites	Accuracy indicators # of students advised Quality of advisement User satisfaction Retention data Persistence to graduation	AVPAREM Chairs Developmental Studies Registrar Center for Undeclared Majors ADAA-COM IEP College Advisement Centers
	2.6.0.0 Registration	VPs	Registrar Asst Dean of Admissions-COM	Process efficiency User satisfaction	Asst Dean, Admis-COM Registrar
	2.7.0.0 Scheduling	VPs	Faculty Chairs Registrar Site Coordinators ADAA-COM	Student/faculty satisfaction Improved space utilization	Registrar Site Coordinators Chairs ADAA-COM
	2.8.0.0 Housing	VPs	Director of Housing	Student Satisfaction Availability Peer Comparison	Director of Housing

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TABLE 24

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
1, 4	3.0.0.0 Enhancement of the Cultural Environment	VPs			
	3.1.0.0 Offering cultural enrichment activities on and off campus	Vps	Deans Directors Chairs Faculty/Staff University Productions (SAC)	# of events # of persons attending Peer comparisons	Deans Chairs DOUR
	3.2.0.0 Promote appreciation and preservation of the Appalachian culture	VPs	Arts & Sciences Dean DOCASS Chairs Faculty	# of events # of persons attending Peer comparison Grants and contracts # of students in Appalachian Studies minor	Arts & Sciences Dean DOCASS Chairs
	3.3.0.0 Teaching and advocating the value of cultural diversity	VPs	Chairs Faculty/Staff DO Multicultural Affairs	# of events # of persons attending Peer comparisons	Deans Chairs DOUR
	3.4.0.0 International studies	VPs	Director International Programs Faculty/Staff	# of events # of persons attending Peer comparisons	Deans Chairs DOUR
	3.5.0.0 Foreign travel	VPs	Director International Programs Faculty/Staff	# of events # of persons attending Peer comparisons	Deans Chairs DOUR

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TABLE 25

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
1, 2, 5, 6	4.0.0.0 Strategic Planning, Development, & Budgeting	President		Critical Success Factors	
	4.1.0.0 TBR 5-Year Plan	VPs	Chair, Strategic Planning	ETSU's plan aligns with TBR's	IEP
	4.2.0.0 ETSU Strategic Plan	VPs	Chair, Strategic Planning Chair, Long Range Planning-COM Deans	Goal achievement	IEP
	4.2.1.0 ETSU 3-Year Computer Plan	VPs	AVPIR DO Computer Services DO Telecommunications DO Libraries AVPCSPS (Distance Learning)	Current equipment State of network Accreditation review TBR approval	AVPIR DO Computer Center
	4.2.2.0 Budgeting	VPs	AD Finance & Administration-COM VPs Budget Director	Action Plan/ Accomplishments	VPs Budget Director
	4.3.0.0 University Facility Master Plan	VPs	Faculty/Staff/ Administration	ETSU's plan aligns with THEC's	VPBF Asst VP Physical Plant Assoc VP Administration

(table continues)

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TABLE 25 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
	4.3.1.0 Plant development and availability of technology	VPs	Faculty/Staff/ Administration	ETSU's plan aligns with THEC's	VPBF Asst VP Physical Plant Assoc VP Administration
	4.4.0.0 Assessment of Outcomes	VPs	Faculty Chairs Deans Student Affairs	Performance on outcome measures Performance Funding Major field test User satisfaction	IEP DOPFAA

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TABLE 26

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
2, 3, 4, 5, 6	5.0.0.0 Resource Acquisition, Development, Management, and Accountability	President VPs			
	5.1.0.0 Fiscal				
	5.1.1.0 State Funding	President	VPBF Budget Director VPHA AVPAA/VPAA	Requested vs Achieved Peer comparison	Budget Director AD Finance & Administration-COM
	5.1.2.0 Fund Raising	President VPUA	VPs/VPUA Deans DO of Development DO Intercollegiate Athletics	$ raised Strategic target accomplished In-kind contributions Peer comparison	VPUA
	5.1.3.0 Grants & Contracts	VPAA VPHA	AVP Research Faculty Professional Staff	Ratio Application/ Awards $ raised	AVP Research
	5.1.4.0 Student Fees	VPs	VPBF; VPSA	Peer & TBR comparison	VPBF
	5.1.5.0 Auxiliary Services	VPBF	VPBF	Contribution to E&G Number & kind Student satisfaction	VPBF Assoc VPBF
	5.1.6.0 MEAC	VPHA	VPHA	Peer Institution comparison	MEAC Exec. Director HA Budget Director

(table continues)

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TABLE 26 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
	5.1.7.0 Business Affairs	VPBF	AVPBF		
	5.1.7.1 Payroll	VPBF	Director	Timeliness, departmental satisfaction legality, internal/ external audit results, loss of assets	Comptroller
	5.1.7.2 Accounts Payable	VPBF	Director	Timeliness, departmental satisfaction legality, internal/external audit results, loss of assets	Comptroller
	5.1.7.3 Purchasing	VPBF	Director	Timeliness, departmental satisfaction legality, internal/external audit results, loss of assets	Comptroller
	5.1.7.4 Cashiering/ Accounts Receivable	VPBF	Bursar	Timeliness, departmental satisfaction legality, internal/external audit results, loss of assets	Comptroller

(table continues)

TABLE 26 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
	5.1.7.5 Financial Accounting/ Reporting	VPBF	Asst Comptroller	Timeliness, departmental satisfaction legality, internal/external audit results, loss of assets	Comptroller
	5.1.7.6" Equipment Security	VPs	Deans Directors Chairs DO Purchasing	Timeliness, departmental satisfaction legality, internal/external audit results, loss of assets	Comptroller
	5.2.0.0 Human Resources	VPBF	Director HR	User satisfaction	
	5.2.1.0 Recruitment and Hiring	VPs	VPs Deans Directors Chairs	Ease of hiring Work force diversity Appropriate credentials Salary/benefits	DO Personnel EEO/AAO
	5.2.2.0 Staff Professional Development	VPs	DOHR Deans Directors DO TLC AVPIR	Training availability Retention Promotion Participation Staff satisfaction	Director

(table continues)

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TABLE 26 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
	5.2.3.0 Orientation and Training	VPs	DOHR EEO/AAO Deans Chairs Supervisors Student workers/ Graduate Assistants	Employee turnover; supervisor satisfaction, employee satisfaction, pay scales, equity, etc., employee effectiveness Stable staffing Productivity/ efficiency	Director HR Deans
	5.2.4.0 Quality of Life	VPs			
	5.2.4.1 Health and Safety	President VPs	DOHR AVP Administration	Crime statistics # served Compliance Improvements User satisfaction	Directors AVP Administration EEO/AAO
	5.2.4.2 Wellness	VPS	DOHR Wellness Committee VPHA	Program offerings # of participants	
	5.2.4.3 Recreation	VPs	DO Campus Recreation		
	5.2.4.4 Child/Family Care	VPs	DOHR		
	5.2.5.0 Staff evaluation process	VPs	DOHR Deans Directors Chairs	Increased employee effectiveness	Director HR, Deans, Directors

(table continues)

TABLE 26 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
	5.2.6.0 Staff classification/ compensation	VPBF	Director HR Deans Directors Chairs	Employee satisfaction Reduced turnover	Director HR
	5.3.0.0 Physical	VPBF	Asst VP Physical Plant	Student/employee satisfaction; system failures; timeliness; visitor response; etc.	AVP Physical Plant
	5.3.1.0 Preventive Maintenance	VPBF	Asst Director	Student/employee satisfaction; system failures; timeliness; visitor response; etc.	AVP Physical Plant
	5.3.2.0 Environmental (HVAC, Custodial, Grounds, etc.)	VPBF	Asst Director	Student/employee satisfaction; system failures; timeliness; visitor response; etc.	AVP Physical Plant
	5.3.3.0 Renovations	VPBF	Asst Director	Student/employee satisfaction; system failures; timeliness; visitor response; etc.	AVP Physical Plant

(table continues)

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TABLE 26 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
	5.3.4.0 Technological Support	VPs	AVPIR ADIR-COM DO Computer Services DO Telecommunications AVP Physical Plant	Availability of technology Maintenance of technology Support service User satisfaction	AVPIR ADIR-COM

TABLE 27

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
1, 2, 3, 4, 5, 6	6.0.0.0 University Management/ Governance	President		Key Success Factors	
	6.1.0.0 Communications	President VPs	University Relations	Consistent info (#/types of communications) Accessibility to info Quality of info (timely, accurate, relevant, current) User satisfaction	Director
	6.2.0.0 Data Management	VPs	DOIEP	Accuracy of data Timeliness of delivery Accessibility of data User satisfaction	Director
	6.3.0.0 Internal Governance	VPs	Senates, Councils, Committees	Mission/Goal accomplishment Program accreditation	IEP
	6.3.1.0 President's Council	President	President	Mission/Goal Accomplishment	IEP
	6.3.2.0 Academic Council	VPAA	VPAA	Mission/Goal Accomplishment	VPAA
	6.3.3.0 Senates (Faculty, Staff, SGA)	VPs	Presidents	Mission/Goal Accomplishment	Senates
	6.3.4.0 Standing/ Advisory Committees	President VPs	Committee Chairs	Mission/Goal Accomplishment	Committees

(table continues)

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TABLE 27 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
	6.4.0.0 External Governance	President VPs	President VPs	Acquisition of resources Program approvals Mission/Goals accomplishment	IEP VPBF
	6.4.1.0 Governor/ Legislature	President	President	Peer Institution comparison	IEP VPBF
	6.4.2.0 TBR/THEC	President VPs	VPs	Compliance	IEP
	6.4.3.0 Advisory Councils	Deans Chairs	Chairs Deans	Mission/Goal accomplishment	Deans Chairs

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TABLE 28

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
1, 4	7.0.0.0 Research/ Scholarship/ Creative Activity	VPAA, VPHA			AVP Research
	7.1.0.0 Research/ Scholarship/ Creative Activity	VPs	Faculty AVP Research DO Sponsored Programs Deans Chairs	Faculty satisfaction # of grants #/quality of publications, presentations Internal research support FAP/FAR/FAE # students involved in research projects Quality of student papers/ presentations Student progression into graduate programs Comparison to peers Student recognition by gaining assistantships/ fellowships Juried shows Performances	AVP Research Deans Chairs
	7.1.1.0 Research Contract or Grant Development	VPs	Faculty AVP Research DO Sponsored Programs Deans Chairs	Faculty satisfaction # of contracts and grants FAP/FAR/FAE Internal support # of students involved Peer comparison	AVP Research Deans Chairs

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TABLE 29

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
1, 2, 3, 4, 5	8.0.0.0 Service (Community Outreach)	VPs		Stakeholder satisfaction	
	8.1.0.0 Community Service	VPs	Faculty/Staff Deans/Chairs University Relations Athletics	Faculty release time Student participation Partnerships Facility accessibility/use Community feedback Volunteer outreach FAP/FAR/FAE	Chairs Deans DOUR
	8.1.1.0 Service learning opportunities	VPs	Directors Chairs/Faculty/Staff DO Student Activities Center	# agencies served # students involved # courses with a service component	Chairs Deans DOUR
	8.1.2.0 Professional service	VPs	Deans/Chairs Faculty/Staff	FAP/FAR/FAE	Chairs Deans DOUR
	8.1.2.1 Clinical Health Services	VPHA	Directors Faculty/Staff . Deans/Chairs	# and kind of services offered	VPHA Deans
	8.1.2.2 Continuing Studies and Professional Development	VPAA	AVPCSPS Deans/Chairs/ Directors/Staff	# and kind of services offered	VPHA Deans
	8.1.2.3 Continuing Medical Education	VPHA	AVPCSPS Directors Faculty/Staff	User satisfaction Peer comparison	VPHA Deans
	8.2.0.0 Partnerships with Foreign Universities	VPAA	Deans Chairs/Faculty DO International Programs	# of participants served Peer comparison	VPHA Deans

(table continues)

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TABLE 29 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
	8.3.0.0 Alumni Relations/Services	VPs	DO University Alumni Deans/Chairs/Faculty	$/donations alumni involvement career development/ placement satisfaction surveys alumni identification/ tracking # of activities and events # of participants served	Chairs Deans DO University #Alumni Records VPUA

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TABLE 30

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
1, 6	9.0.0.0 Developing/ Maintaining Learning Environment	VPAA, VPSA VPBF, VPHA		Student satisfaction	
	9.1.0.0 Student Services	VPs	VPSA ADSA-COM Deans/Chairs	Orientation participation/ satisfaction Student success graduation, career accomplishment GPA, changes in major Student satisfaction Health & wellness Housing occupancy # judicial actions Crime statistics	VPSA ADSA-COM DO Public Safety Registrar DO Placement Office
	9.2.0.0 Career Development & Placement	VPs	DO Career Development DO Counseling Center Deans/Chairs	Alumni/employer survey Placement rates by major field Beginning salaries # using services (students/ employers) User satisfaction	Directors
	9.3.0.0 Special Programs	VP	AVPAA AVPSA	Student retention User services	AVPAA AVPAREM AVPSA
	9.4.0.0 Intercollegiate Athletics	President	DO Intercollegiate Athletics	Graduation rates Community involvement Conference ranking	Director

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TABLE 31

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	KEY PROCESS	ADMINISTRATIVE RESPONSIBILITY	PRIMARY ACTION RESPONSIBILITY	MEASURES	DATA STEWARD
4, 5	10.0.0. Communicating the University Image	DOUR		Comparison with Peer Institutions	
	10.1.0 Media Relations	DOUR VPs	DOUR Deans/Directors/ Chairs	Amount and nature of coverage in print and broadcast media Anecdotal evidence of impact	DOUR Deans
	10.2.0 Campus Publications	DOUR VPs	DO Publications Deans/Directors/ Chairs VPUA	# of publications Quality of writing, photography, design, and printing Anecdotal evidence of impact	DO Publications
	10.3.0 Audiovisual Productions	DOUR VPs	DOUR Deans/Chairs	Quality of script and images Anecdotal evidence of impact	DOUR
	10.4.0 Community Relations	DOUR VPs	DOUR Deans/Chairs AVPCSPS	Community awareness, feedback, use of University resources	DOUR
	10.5.0 Marketing and Promotion	DOUR VPs	DO Marketing and Promotion	Enrollment Attendance at events Private giving	DOUR

(table continues)

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TABLE 31 (continued)

ETSU CONTINUOUS IMPROVEMENT KEY PROCESS RELATIONSHIP MATRIX
CONSENSUS ACHIEVED PRESIDENT'S COUNCIL/STRATEGIC PLANNING COMMITTEE 11/01/95

KEY SUCCESS FACTOR (Key Result Area)	*KEY PROCESS*	*ADMINISTRATIVE RESPONSIBILITY*	*PRIMARY ACTION RESPONSIBILITY*	*MEASURES*	*DATA STEWARD*
	10.6.0 Internal Communication	VPs DOUR	Deans Directors Chairs	Level of understanding of University, people, programs, procedures, and policies	DOUR
	10.7.0 WETS-FM	DOUR	DO WETS-FM	Listener contributions Quality of programming Ratings	DO WETS-FM

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APPENDIX B

LETTER OF TRANSMITTAL

January 29, 1996

Dr. Judith A. Gaston
University of Minnesota Quality
1313 5th St., S.E. Ste. 108
Minneapolis, MN 55414

Dear Dr. Gaston:

We respectfully request your assistance with a graduate research study. In appreciation for your efforts, a copy of the study results will be provided if you so indicate by returning the enclosed postcard. The primary study objective is to reach a consensus among higher education quality administrators on key "institutional" processes and performance measures that would allow for focused data collection and comparison for future benchmarking investigations between institutions.

The attached survey instrument is a short questionnaire that outlines ten key institutional processes along with thirty-four corresponding performance measures as developed by the East Tennessee State University Strategic Planning Committee. Related sub-processes are also included to aid in understanding the scope of the key processes. To respond simply circle agree or disagree and list any "other" key processes or measures you feel are appropriate in the space provided. Be assured that your individual responses are completely anonymous.

To ensure successful completion of this study your responses need to be returned via enclosed envelope before February 19th, 1996. If you have any questions we can be reached by phoning (423) 929-4465; (423) 282-4124 or Faxing (423) 929-5743.

We greatly appreciate your efforts in helping to accomplish the objectives of this study.

Sincerely,

Robert G. Stewart
Thesis Author

James A. Hales
Dean College of Applied Science and Technology
Chair University Strategic Planning Committee
Thesis Advisor

APPENDIX C

QUESTIONNAIRE

EAST TENNESSEE STATE UNIVERSITY			
SURVEY OF KEY INSTITUTIONAL PROCESSES AND MEASURES			
KEY INSTITUTIONAL PROCESSES	**RATE**	**KEY PERFORMANCE MEASURES**	**RATE**
1.0 TEACHING/LEARNING Related Sub-Processes 1.1 Curriculum Development 1.2 Teaching 1.3 Learning 1.4 Academic Support for Instruction 1.5 Student Life Program Development 1.6 Professional Development (Faculty) 1.7 Faculty Evaluation 1.8 Continuing Studies	A D	Student Entrance Examinations Student Exit Examinations Student Retention Data Other Key Measures: _____ _____ _____ _____ _____ _____ _____ _____ _____	A D A D A D
2.0 ENROLLMENT MANAGEMENT Related Sub-Processes 2.1 Recruiting (Marketing) 2.2 Admissions 2.3 Financial Aid 2.4 Orientation 2.5 Advisement 2.6 Registration 2.7 Scheduling 2.8 Housing	A D	Student Enrollment Admissions Growth Student Satisfaction Diversity Data Student Success Retention Data Other Key Measures: _____ _____ _____ _____	A D A D A D A D A D A D

KEY INSTITUTIONAL PROCESSES	RATE	KEY PERFORMANCE MEASURES	RATE
3.0 ENHANCEMENT OF THE CULTURAL ENVIRONMENT Related Sub-Processes 3.1 Offering Cultural Enrichment Activities On and Off Campus 3.2 International Studies 3.3 Foreign Travel	A D	Number of Events Number of Persons Attending Peer Institution Comparisons Other Key Measures: _____ _____ _____ _____	A D A D A D
4.0 STRATEGIC PLANNING, DEVELOPMENT & BUDGETING Related Sub-Processes 4.1 State Board of Regents 5-Year Plan 4.2 Institutional Strategic Plan 4.3 Institutional Facility Master Plan 4.4 Assessment of Outcomes	A D	Peer Institution Comparisons Resource Availability Student/Alumni Surveys Goal Achievement Performance On Outcome Measures Other Key Measures: _____ _____ _____	A D A D A D A D A D
5.0 RESOURCE ACQUISITION, DEVELOPMENT, MANAGEMENT AND ACCOUNTABILITY Related Sub-Processes 5.1 Fiscal 5.1.1 State Funding 5.2 Human Resources 5.3 Physical 5.3.1 Preventive Maintenance	A D	Peer Institution Comparisons Requested vs Achieved Faculty/Staff Satisfaction Other Key Measures: _____ _____ _____ _____ _____	A D A D A D

KEY INSTITUTIONAL PROCESSES	RATE	KEY PERFORMANCE MEASURES	RATE
6.0 INSTITUTIONAL MANAGEMENT/ GOVERNANCE Related Sub-Processes 6.1 Communications 6.2 Data Management 6.3 Internal Governance 6.4 External Governance	A D	Peer Institution Comparisons Mission/Goal Accomplishment Program Accreditation Faculty/Staff Satisfaction Other Key Measures: _____ _____ _____	A D A D A D A D
7.0 RESEARCH/SCHOLARSHIP/CREATIVE ACTIVITY Related Sub-Processes 7.1 Research Contract or Grant Development	A D	Peer Institution Comparisons Internal Support Number of Grants Received Amount of Dollars Generated Number of Publications/ Presentations Juried Shows/Performances Other Key Measures: _____ _____	A D A D A D A D A D A D
8.0 SERVICE (COMMUNITY OUTREACH) Related Sub-Processes 8.1 Community Services 8.1.1 Service Learning Opportunities 8.1.2 Professional Service 8.2 Partnerships with Foreign Institutions	A D	Peer Institution Comparisons User Satisfaction Other Key Measures: _____ _____ _____ _____ _____	A D A D

KEY INSTITUTIONAL PROCESSES	RATE	KEY PERFORMANCE MEASURES	RATE
9.0 DEVELOPING/MAINTAINING LEARNING ENVIRONMENT Related Sub-Processes 9.1 Student Services 9.2 Career Development & Placement 9.3 Special Programs 9.4 Intercollegiate Athletics	A D	Student/Alumni Satisfaction Other Key Measures: _____ _____ _____ _____ _____	A D
10.0 COMMUNICATING THE INSTITUTIONAL IMAGE Related Sub-Processes 10.1 Media Relations 10.2 Campus Publications 10.3 Audiovisual Productions 10.4 Community Relations 10.5 Marketing and Promotion 10.6 Internal Communication	A D	Peer Institution Comparisons Other Key Measures: _____ _____ _____ _____ _____ _____ _____	A D
Other Key Process: _____ _____		Key Measures: _____ _____ _____ _____	
Other Key Process: _____ _____		Key Measures: _____ _____ _____ _____	

Other Key Process:	Key Measures:
Other Key Process:	Key Measures:
Other Key Process:	Key Measures:
Other Key Process:	Key Measures:
Other Key Process:	Key Measures:

APPENDIX D

DIRECTORY OF RESPONDENTS

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Note: All information was current as of 18 May 1996.

VITA

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Graduate Research Assistant
East Tennessee State University
College of Applied Science & Technology
1994-1996.

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Phi Kappa Phi Honor Society
April 2, 1996
Gamma Beta Phi Honor Society
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